

**Remarks/Arguments**

Applicants have reviewed the he Office Action mailed October 28, 2009. To better distinguish their invention over the art of record, applicants have amended claims 1 and 8. Claims 1-14 remain pending in this application. Applicants request reconsideration of the above-identified application, as herein amended and in view of the following remarks.

Claims 1-2, 4-6, 8-9 and 11-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,313,315 to Morris et al, in view of U.S. Patent No. 6,031,960 to Lane. Claims 1 and 8 are the independent claims in the application.

Initially, applicant notes that the cited patent to Lane (USP 6,031,960) has been removed as the primary reference and is now being used as the secondary reference in view of the newly cited '315 patent to Morris et al.

Before specifically addressing the rejection, applicants note that the '315 patent disclose "methods and apparatus for making and replaying digital video recordings, and recording made by such methods." (See the Title). The '315 states for its purpose "to provide conversion of broadcast TS format streams into a format suitable for recording and random access, without the burden of conversion to PS format." (See Col. 2, lines 54-57).

In rejecting independent claims 1 and 8, the Examiner has cited the '315 patent to Morris et al for showing applicant's claimed step of "setting a discontinuity indicator in an adaptation field associated with a video frame" citing Col. 6, lines 40-52. However, upon closer examination of the teachings of Morris et al., applicants respectfully assert that this reference does not disclose or suggest the setting of a discontinuity indicator in an adaptation field associated with a video frame as recited in claims 1 and 8.

Figure 4 of Morris et al. illustrates the key features and structure of the MPEG-2 transport stream (TS) format. The cited portion of Morris et al. relates to the description of Figure 4 which is clearly understood and known by those of skill in the art of MPEG video transport streams. Notwithstanding the foregoing, and for purposes of clarification, Col. 6, lines 40-52 cited by the Examiner states:

Depending on the contents of field AFC, there may be present an adaptation field AF, occupying some of the

space otherwise allocated to payload data. The adaptation field AF may for example contain a discontinuity indicator flag as defined in ISO/IEC 13818 for MPEG2. When set to '1', this flag indicates that the discontinuity state is true for the current Transport Stream packet. The discontinuity indicator is used to indicate two types of discontinuities, system time-base discontinuities and continuity counter discontinuities. In addition to optional data fields of pre-defined meaning, the adaptation field can be padded with stuffing bytes, so as to match the PES packet ends to TS packet boundaries

There is nothing in this passage of Morris et al. that discloses or suggests the setting of the discontinuity indicator in the adaptation field associated with a video frame in order to disable a synchronization circuit, as recited in applicants' claims 1 and 8. In fact, this discussion in Morris et al. constitutes part of the description of the MPEG transport stream format, and serves to explain the AFC field and what it may include. Nowhere else in the entire disclosure of Morris et al. is there any mention of a discontinuity indicator.

Morris et al. discloses two very specific approaches to achieve the desired recording format (i.e., conversion of the TS stream format to a format suitable for recording and random access.) In particular, the first approach (not shown) provides for insertion of copies of the PAT/PMT immediately before each access unit as it is recorded. (See Col. 11, lines 5-14). The second approach (shown in Figure 6) describes re-mapping of the PIDs for every packet to establish a defined set of PIDs used for all recordings. (See Col. 11, line 24 et seq.).

Notwithstanding the foregoing, Lane fails to cure the deficiencies of Morris et al. As explained in applicants' previous response, Lane does not disclose or remotely suggest the setting of a discontinuity indicator. Rather, Lane teaches the step of setting substitute PCR values used to implement trick mode playback, for example fast motion playback. However, Lane does not contemplate that the trick mode performance will be limited by the decoder's synchronization circuit, and this caveat is not taught or suggestion by Lane, taken singly or in combination with any of the other cited references.

A typical MPEG decoder comprises a synchronization circuit having a voltage controlled oscillator to generate a local system clock (LSTC). The LSTC synchronizes the decoder to the system time clock of the MPEG encoder. As the PCR values are manipulated to initiate trick mode playback, the synchronization circuit generates a control signal which causes the frequency of the voltage controlled oscillator to shift, which interferes with playback timing. For instance, during fast forward playback the oscillator shift causes a time delay in the decoding and display of pictures, thus limiting the quality of fast motion playback. Neither Morris et al. nor Lane recognize that this limitation exists. The inventors, however, identified the limitation and invented the present means to overcome it.

The claimed invention as set forth in amended claims 1 and 8, sets the discontinuity indicator in each adaptation field to effectively disable any frequency adjustment process of a synchronization circuit. This causes each substitute PCR to be loaded into the counter as a new PCR, and thus re-set the LTSC with each new substitute value. Doing so prevents the output of the frequency controlled oscillator from increasing or decreasing in response to the new PCR values. Accordingly, the claimed invention provides trick mode playback with higher quality than that achieved by the teachings of Morris et al, and/or Lane taken singly or in any combination.

In light of the foregoing, Applicant respectfully believes that independent amended claims 1 and 8, as well as all of the originally filed dependent claims 2-7 and 9-14 are believed to be novel and non-obvious over the cited references.

Claims 3 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Morris et al, and Lane in view of U.S. Patent No. 7,292,287 to Sugahara et al. Claims 3 and 10 depend from independent claims 1 and 8, respectively, and for at least the reasons discussed above are believed to be patentably distinct from the combination of references. Reconsideration and withdrawal of the rejection is respectfully requested.

## **Conclusion**

In view of the foregoing, applicants solicit entry of this amendment and allowance of the claims. If the Examiner cannot take such action, the Examiner should contact the applicant's attorney at (609) 734-6820 to arrange a mutually convenient date and time for a telephonic interview.

No fees are believed due with regard to this Amendment. Please charge any fee or credit any overpayment to Deposit Account No. **07-0832**.

Respectfully submitted,

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